



Real-Time Emulator Motorola® MC68000

MODEL 64242S

TECHNICAL DATA 1 SEP 82

Description

Model 64242S Emulator offers real-time, full-speed emulation of Motorola MC68000 microprocessors. This capability brings the power of emulation to all phases of the microprocessor-based product design, development, and maintenance. As a subsystem of the HP 64000 Logic Development System, Model 64242S emulator also provides access to the other sophisticated software and hardware development tools of the 64000 System. With the versatile 64000 System, you can speed your 68000-based systems to market.

Model 64242S is part of an integrated set of design and development aids for 68000 processors. Compilers and assembler/linkers are available to accommodate programming at the most efficient level. Directed syntax softkeys and an easy-to-use, responsive editor streamline software development and documentation. Logic State/Software Analysis or Logic Timing/Hardware Analysis subsystems may be combined with the emulator for interactive operating modes. Emulation/analysis measurements provide added flexibility in integrating, optimizing, and troubleshooting. Accelerate your design cycle by selecting the best 64000 system for your 68000 development needs. Convenience, ease of use, and the measurement power of the 64000 System help you produce a better 68000 product in less time, to gain a competitive edge.

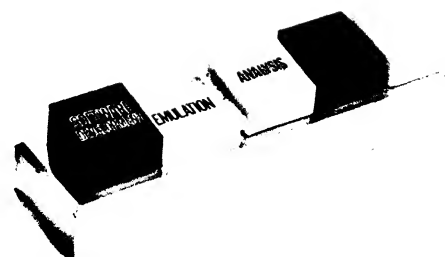


Emulator Features

- Real-time execution to 8 MHz independent of emulation/target memory assignment
- No wait states inserted by emulation memory
- An emulation mode that is fully transparent to target system (i.e., processor interrupt and other resources are not disturbed)
- Support processor bus request/grant activities
 - DMA transfers
 - Multiple, slave, or coprocessor
- Fully interactive multiprocessor emulation

Memory Features

- 20-bit width mapped in 256-byte blocks over 1M-byte address space
- 24-bit width mapped in 4k-byte blocks over 16M-byte address space
- Up to 128k bytes of emulation memory available



Analysis and Debugging Features

- Compatibility with 64600S Logic Timing/Hardware Analysis and 64620S Logic State/Software Analysis subsystems for interactive measurements in a single development station
- Powerful internal logic analyzer for real-time monitoring of processor bus activity
- Single cycling and register displays of processor's internal activity
- User-definable monitor program to tailor debugging resources for specific target system
- 16 software breakpoints
- Simulated I/O for emulator access to 64000 System resources: disc files, printer, and development station keyboard, display, and RS-232 port
- Display and modify capabilities on user I/O ports
- Command file structure combines with emulation for automated testing and debugging
- Full disassembly of processor instructions
- Symbolic debugging

Ordering Information

A complete MC68000 emulator consists of Model 64242S Emulator subsystem, and Model 64155S Emulation Memory system; Model 64302A 48-Channel Internal Logic Analyzer is available to display activity on the emulator bus. Emulator software is available on flexible disc (64242SF) or tape cartridge (64242ST) for transfer of the emulator operating system to mass storage. Model 64845AF/AT Assembler/Linker and Model 64815AF/AT Pascal Compiler are highly recommended; they are also transferred to mass storage. Only one set of software is needed for each 64000 System cluster.

Your HP Field Engineer can help you determine the best configuration to meet your needs.

Characteristics

ELECTRICAL

Maximum Clock Speed: (no wait states inserted) 8 MHz.

Data Input: low-power Schottky TTL loads with capacitance of approx 20 pF.

Clock Input: meets Motorola MC68000 specifications plus capacitance of approx 20 pF.

PHYSICAL

Cable Length: development station to emulation pod, approx 1.5 m (5 ft); emulation pod to target system interface, approx 305 mm (1 ft).

ENVIRONMENTAL

Temperature: operating, 0° to +40° C (+32° to +140° F); nonoperating, -40° to +75° C (-40° to +167° F); operating survival, -20° to +50° C (-4° to +122° F).

Altitude: operating, 4600 m (15 000 ft); nonoperating, 15 300 m (50 000 ft).

Relative Humidity: 5% to 80%.

Model 64242S 68000 Emulation Subsystem

Model 64242SF 68000 Emulation Software on flexible disc
Model 64242ST 68000 Emulation Software on tape cartridge

Model 64155S 32k Byte Emulation Memory System

Option 009 8k Byte Emulation Memory System

Option 010 16k Byte Emulation Memory System

Option 011 64k Byte Emulation Memory System

Option 012 96k Byte Emulation Memory System

Option 013 128k Byte Emulation Memory System

Model 64302A 48-channel Internal Logic Analyzer

Model 64845AF 68000 Assembler/Linker on flexible disc

Model 64845AT 68000 Assembler/Linker on tape cartridge

Model 64815AF 68000 Pascal Compiler on flexible disc

Model 64815AT 68000 Pascal Compiler on tape cartridge

COMPONENTS

Model 64242A 68000 Emulator Pod

Model 64271A General Purpose Emulation Control Board

Model 64155A Wide-Address Emulation Memory Control Board